DOCUMENT RESUME

ED 281 475 HE 020 379

AUTHOR Krakower, Jack
TITLE The Reliability and Validity of Organizational Climates. ASHE 1987 Annual Meeting Paper.
PUB DATE Feb 87
NOTE 32p.; Paper presented at the Annual Meeting of the Association for the Study of Higher Education (San Diego, CA, February 14-17, 1987). For the national study discussed in this paper, see HE 020 378.
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150) -- Tests/Evaluation Instruments (160)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Administrator Attitudes; *College Environment; *Data Analysis; Higher Education; *Institutional Characteristics; *Norms; *Organizational Climate; Questionnaires; Reliability; School Effectiveness; Statistical Analysis; Teacher Attitudes; Validity
IDENTIFIERS *Aggregation (Data); *ASHE Annual Meeting

ABSTRACT

The validity and reliability of aggregating individuals' perceptions of college organizational characteristics to more macro units of analysis were examined. The focus was the extent to which data collected in a national study met the internal consistency criterion for aggregating perceptual data to the institution level. The study assessed key dimensions of institutional performance and effectiveness. Respondents were to take an institutional rather than an individual focus. For 334 participating colleges and universities, responses were obtained from 3,406 administrators, faculty, and trustees. The results argue against aggregating individual perceptions of college conditions. Organizational climate scores derived by averaging individuals' perceptions of conditions do not reflect how individuals in an organization generally perceive, understand, or respond to organizational conditions. The results suggest that employing group means to draw conclusions about organizational conditions may lead to spurious conclusions, and that previous studies in higher education that draw conclusions based on aggregated perceptual data may be seriously flawed. The questionnaire used in the national study is appended. (SW)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED281475

The Reliability and Validity of Organizational Climates

Jack Krakower
College of Business
University of Colorado, Denver
(303) 623-4436

Prepared for the meeting of the Association for the Study of Higher Education, February, 1987, San Diego

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

ASHE

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

HE 020 379

ASHE

ASSOCIATION
FOR THE
STUDY OF
HIGHER EDUCATION

The George Washington
University
One Dupont Circle, Suite 630
Washington, D.C. 20036-1183
(202) 296-2597

This paper was presented at the Annual Meeting of the Association for the Study of Higher Education held at the San Diego Hilton in San Diego, California, February 14-17, 1987. This paper was reviewed by ASHE and was judged to be of high quality and of interest to others concerned with the research of higher education. It has therefore been selected to be included in the ERIC collection of ASHE conference papers.

Abstract

This research examines the validity and reliability of aggregating individuals' perceptions of organizational (college and university) characteristics to more macro units of analysis. The results suggest that commonly employed aggregation practices may lead to spurious conclusions. In addition, they suggest that the reliability and validity of previous studies in higher education that draw conclusions based on aggregated perceptual data may be seriously flawed.

The Reliability and Validity of Organizational Climates

Introduction

The use of perceptual data to assess organizational conditions and practices in higher education is commonplace. Instruments such as the Institutional Goals Inventory (Educational Testing Service), Institutional Functioning Inventory (ETS), and the Higher Education Management Institute's Needs Assessment Survey--all of which assess individuals' perceptions of various institutional characteristics--have been used by hundreds of institutions for purposes of self-study, planning, evaluation, and policymaking. This type of data is also frequently used by researchers to investigate the relationship between various organizational chararacteristics and practices in colleges and universities.

More often than not, individuals' perceptions of an organization's characteristics are aggregated to more macro units of analysis--for example, to the department or institution level. The utility of the resulting index (the mean) rests on the assumption that it reflects how each member of the group generally perceives, imputes meaning, and responds to the environment. However, previous research indicates that this assumption is generally unwarranted.

Unfortunately, very little research has been done on the appropriateness of aggregating individuals' perceptions of organizational characteristics in colleges and universities. Failure to address this issue may account for many of the faulty policy-decisions and inconclusive research studies that are documented in the literature. This paper reports the results of a study concerned with assessing the reliability and validity of aggregating individuals' perceptions of organizational characterisitics in colleges and universities.

Theoretical Background

The literature in psychology refers to individuals' perceptions of organizational characteristics as "psychological climates" (Joyce and Slocum, 1979; Weick, 1979; James and Jones, 1974; Jones and James, 1979; Schneider, 1975, 1981; Gavin and Howe, 1975; Payne, Fineman, and Wall, 1976; Woodman and King, 1978). It is generally assumed that psychological climates are influenced by individuals' experiences, biases, preferences--that is, they are viewed as subjective and psychological in nature. Such perceptions are useful because they help us understand the influence of the organizational environment on individual performance and satisfaction.

When psychological climate data are aggregated the resulting measures are referred to as "organizational climates" (Drexler, 1977; Joyce and Slocum, 1979; Gavin, 1975; Gavin and Kelley, 1978; Howe, 1977; Jones and James, 1979; Newman, 1975). The utility of

organizational climates rests on the assumption that they reflect how each member of the group generally perceives, imputes meaning, and responds to the environment. However, a body of research that has evolved during the last fifteen years indicates that when aggregate indices are based on existing groups, both the reliability and the validity of the resulting index are suspect.

Current thinking in climate research suggests that the unit of theory for climate, including organizational climate, is the individual. This thinking is based on the view that climate involves a set of macro perceptions that reflect how environments are cognitively represented in terms of their psychological meaning and significance to the individual. However, as noted by James (1982), characterizing the "unit of theory" for climate as the individual does not imply that climate perceptions cannot be aggregated and used to describe organizations (or groups, divisions, departments, etc.).

There are, however, criteria to be met before aggregating scores on a variable for which the "unit of theory" is the individual. These criteria include (Joyce and Slocum, 1984, p.722): (1) discrimination, or demonstrable differences between the mean climate perceptions of different groups (Drexler, 1977; Howe, 1977; Newman, 1975); (2) predictable relationships to organizational or individual performance (Pritchard and Karasick, 1973); and (3) internal consistency, or agreement of perceptions within groups (Howe, 1977).

Most of the research that has been done on the reliability and validity of aggregating individual perceptual data to more macro units of analysis has focused on business and military organizations (Drexler, 1977; James and Sells, 1981; Jones and James, 1979; Joyce and Slocum, 1979; Payne and Pugh, 1976; Powell and Butterfield, 1978). Review of these studies provides little support for the validity of aggregating individuals' perceptions of organizational characteristics. Estimates of perceptual aggreement (based on intraclass correlation coefficients) ranged between .00 and .50, with a median of approximately .12 (Hater, 1977; James and Sells, 1981; Jones and James, 1979).

Little if any research has been done on the reliability and validity of organizational climates in higher education. A search of the Educational Resources Information Center (ERIC) database produced only three articles since 1966 that dealt with the validity of organizational climates in education. A search of Dialog's "Psychinfo" database--which includes descriptions of all published articles in psychology since 1967--produced a similiar number. Even the technical manuals for instruments frequently used to assess perceptions of college and university conditions--the Institutional Functioning Inventory (Educational Testing Service), the Institutional Goals Inventory (Educational Testing Service), and the Higher Education Management Institute's Needs Assessment Survey--make no mention of the reliability or validity of aggregate climate data, even though aggregate statistics form the basis for their feedback reports.

Reliability and the Intraclass Correlation

Reliability may be defined as the ratio of true score variance to total score variance (Winer, 1971):

$$\rho = \sigma_{\pi}^2 / \sigma_{t}^2 + \sigma_{\pi}^2 \qquad (1)$$

Where σ_{π}^2 equals true score variance, and σ_{π}^2 equals error score variance. In terms of this definition of reliability, it is easily shown that the intraclass correlation provides a measure of the reliability of measurements (Winer, 1971; Bartko, 1966; 1976; Ebel, 1967).

Derived in terms of a single factor analysis of variance model with repeated measures (Winer, 1971), the formula for the intraclass correlation coefficient for k raters is

$$ICC(k) = \frac{MS_{b.people} - MS_{w.people}}{MS_{b.people}} \qquad (2)$$

where, k = number of raters
$MS_{b.people}$ = mean square between people
$MS_{w.people}$ = mean square within people

Negative coefficients are defined as zero. The reliability of a single measurement is given by

$$ICC(1) = \frac{MS_{b.people} - MS_{w.people}}{MS_{b.people} + (k-1)\, MS_{w.people}} \qquad (3)$$

ICC(1) is most directly interpreted as the average correlation between any two judges ratings. It is easily shown that the magnitude of ICC(1) is a function of intra-class rater agreement.

ICC(k) can be estimated from ICC(1) by application of the Spearman-Brown prophecy formula:

$$ICC(k) = \frac{k*ICC(1)}{1 + (k-1)*ICC(1)} \qquad (4)$$

ICC(k) reflects the correlation between the average ratings of two randomly selected groups of judges. However, James (1982) demonstrates that ICC(k) is not a measure of perceptual agreement. Using the Spearman-Brown prophecy formula, James demonstrates that a trivial ICC(1) may lead to a very large ICC(k).

In typical rater reliability studies, a random sample of n targets is rated independently by k judges. Three cases of this kind can be defined (Shrout and Fleiss, 1979, p. 420):

1. Each target is rated by a different set of k judges, randomly selected from a larger population of judges.

2. A random sample of k judges is selected from a larger population, and each judge rates each target, that is, each judge rates n targets altogether.

3. Each target is rated by each of the same k judges, who are the only judges of interest.

The case 1 model is illustrated below:

Target	Ratings
1	2 3 3 4
2	4 5 5 7 8 9
3	3 4 5
.	.
n	k

The case 1 model reflects a situation where the ratings are incomplete, and the sources of ratings are unknown. Different groups of judges rates associated with with their class. Qualitative differences among targets are irrelevant in this model. However, it is generally presumed that all targets are being rated on the same dimension. In this situation, ICC(1) provides us with a measure of average within-class agreement.

Estimating reliability in case 1 situation presents a special problem. The formula requires a value of k, the number of ratings of each target. However, case 1 allows for a different number of raters for each target. Snedecor (1946), and Ebel (1967) suggest that we can obtain an average k which provides a consistent estimate of ICC(1) with the following formula:

$$k_o = \frac{1}{n - 1} \left[\Sigma k - \frac{\Sigma k^2}{k} \right] \qquad (4)$$

The case 2 model is illustrated below:

Target	Ratings
1	1 2 3 ... k
2	1 2 3 ... k
3	1 2 3 ... k
.	.
n	1 2 3 ... k

The case 2 model applies when a random sample of raters is selected from a larger population, and each rater rates all n

targets of interest on a single dimension. In this instance, ICC(1) provides a measure of perceptual agreement between raters on all targets. The case 3 model differs from the case 2 model only in so far that the k raters represent the only raters of interest, rather than a random selection.

In all three models, a high ICC(1) follows from high intra-class perceptual agreement. The difference between inter-class and intra-class agreement is illustrated below for a case 1 situation. In this example, the ratings and mean rating of two schools on a single dimension (e.g., morale) are identical.

Item #1	Ratings	Mean
School 1	1, 2, 3, 4, 5	3.0
School 2	1, 2, 3, 4, 5	3.0

In this example ICC(1) equals zero because intra-school agreement is zero. In terms of the model specified in equation 3, we obtain:

$$ICC(1) = \frac{MS_{b.people} - MS_{w.people}}{MS_{b.people} + (k-1)\,MS_{w.people}}$$

$$= \frac{0 - 2.5}{0 + (5-1)(2.5)} = -.25$$

$$= 0$$

Coversely, because the intra-class correlation measures within-class agreement, raters in different schools could view their schools in entirely opposite but consistent ways, and ICC(1) would equal 1.00. This is illustrated below:

Item #1	Ratings	Mean
School 1	1, 1, 1, 1, 1	1.0
School 2	5, 5, 5, 5, 5	5.0

In terms of the model specified in equation 3 we obtain,

$$ICC(1) = \frac{MS_{b.people} - MS_{w.people}}{MS_{b.people} + (k-1)\,MS_{w.people}}$$

$$= \frac{4 - 0}{4 + (5-1)*0}$$

$$= 1.0$$

The case 1 model is used in this study for several reasons. First, the study is based on the results of a survey of randomly selected faculty, administrators, and trustees in a sample of four year colleges. Second, most of the items in the survey measured unique constructs--such as morale, conflict, student-faculty relations, etc. The case 2 model is generally inappropriate in

this instance, since we would be assessing agreement with respect to more than one construct or dimension. Third, by adopting the case 1 model, we obtain an index of the extent to which raters agree about specific conditions within each of their respective organizations, irrespective of differences between organizations.

The Nature of Organizational Climates

In their paper on the etiology of organizational climates, Schneider and Reichers (1983) argue that there are two methodological issues related to the measurement of climates that are unresolved. One, concerns the aggregation problem discussed in the introduction to this paper. The other concerns the multidimensional nature of the climate construct.

The multidimensional issue centers around where one should draw the boundaries for the climate construct. Glick (1985) suggests that it is difficult to distinguish between the domain of organizational climate and organizational "structural characteristics", such as technology, formalization, communication, managerial function, etc. James (1982), on the other hand, argues that the issue is not what characteristics are included within the construct, but simply whether the characteristics are open to interpretation.

In some ways, what constitutes the dimensions of organizational climate is incidental to the aggregation issue. That is, irrespective of the characteristics we believe legitimately constitute the construct, we are still confronted with the validity of aggregating the data we collect to more macro units of analysis.

In other ways, however, the dimensions issue is quite important. From our perspective, the critical question is whether structural characteristics have the property of objective, "bedrock reality" (Ashworth, 1985). Or, whether they are as subjective as any other "psychological variable (James, 1982)--e.g., autonomy, equity, influence, support, warmth." If structural variables are just a class of psychological variables, then the whole issue of drawing the boundaries becomes mute.

While this study is not directly concerned with this problem, it sheds light on the issue by virtue of the organizational characteristics that are assessed in the work that follows.

Research Method

The analysis focuses on assessing the extent to which data collected in a national study meet the internal consistency criterion for aggregating perceptual data to the institution level. The national study was based on the development and

administration of a survey that included questions specifically designed to assess key dimensions of institutional performance and effectiveness. All questions asked respondents to take an institutional, rather than an individual focus. The instrument is shown in Appendix 1.

Most items in the survey, with the exception of those in Section 5 and 8, were constructed so as to measure different constructs. Section 5 items differ both in structure and nature from all other items in the survey. They are intended to measure homogeneous constructs, and are therefore more appropriately assessed using the Case 2 model. Research examining perceptual agreement of the items in Section 5 is reported in Krakower (1987).

The items in Section 8 were intended to measure homogeneous constructs. However, the results of factor analysis provide marginal support for the item-construct relationships. Hence, the items in Section 8 are separately analyzed in this study.

The construct measured by each item is reported in Table 1. Complete descriptions of each construct as well as other psychometric properties of the survey instrument are reported by Krakower and Niwa (1985).

[Table 1 about here]

Colleges selected for participation in the national study were stratified on the basis of enrollment size (200 to 20,000 students); institutional control (public versus private); the presence or absence of graduate programs; and enrollment changes between 1978 and 1981 (growing, stable, declining).

717 institutions were invited to participate in the study. 334 institutions agreed to participate, received, and returned questionnaires. Table 2 details the participant institution characteristics according to the four selection characteristics.

[Table 2 about here]

A contact person was designated by the president of each institution. The contact person provided the names of trustees, administrators, and randomly selected faculty. The survey was sent to a random sample of trustees, faculty, and key administrators in each institution. On average, 21 surveys were sent to each institution--seven to trustees, seven to administrators, and seven to faculty.

The number of respondents per instititution ranged from one to nineteen. Ninety-three percent of the institutions had seven or more respondents. The overall response rate was approximately 48%. 3,406 people responded to the survey--1,321 administrators (39%), 1,158 faculty (34%), and 927 trustees (27%). The average per institution was 4.0 administrators, 3.5 faculty, and 2.8

trustees. The overall average was 10.2 respondents per institution.

Results

Intraclass correlations were calculated for all items in the survey with the exception of the items in Section 5. (Section 5 intraclass correlations are reported elsewhere.) These are reported for administrators, faculty, and trustees in each institution, and for combined respondents in each institution in Table 3.

[Table 3 about here]

By way of example, the first line in the table shows intraclass coefficients of .07, .06, .00, and .04, for administrators, faculty, trustees, and combined respondents in each institution, respectively, for item 1 in Section 1. The item reads:

> Major factors outside our institution that affects its enrollments have become more predictable over the past few years.

The small magnitude of the coefficients in this example indicate that, in general, there is essentially no agreement among raters within <u>each</u> of the institutions included in this study with respect to major factors affecting enrollments.

The coefficients reported in Table 3 range between .00 and .60. However, more than 80% of the coefficients are less than .30. The results are consistent across administrator, faculty, and trustee groups.

The items in sections 4, 6, and 7, on the survey dealt almost entirely with institutional structural characteristics--e.g., specialization, formalization, centralization, planning, diversity, resource allocation, etc. The intraclass correlations for the structural items are, in general, no higher than for more "psychologically" oriented items on the survey. The results strongly suggest that perceptions of organizational structural characteristics are clearly open to individual perceptual interpretation.

Implications

The results of this research strongly argue against aggregating individuals perceptions of organizational conditions to more macro units of analysis. The results indicate that organizational climate scores that are derived by averaging individuals' perceptions of specific organizational conditions do <u>not</u> reflect how individuals in an organization <u>generally</u> perceive, understand, or respond to organizational conditions.

The results suggest that employing group means to draw conclusions about organizational conditions may lead to spurious conclusions. It also follows that future research based on aggregated perceptual data must assess and demonstrate perceptual agreement before drawing any conclusions based on such data. The results also suggest that the reliability and validity of previous studies in higher education that draw conclusions based on aggregated perceptual data may be seriously flawed.

References

Ashforth, B. E. Climate formation: Issues and extensions. Academy of Management Review, 1985, 10, 837-847.

Bartko, J. J. The intraclass correlation coefficient as a measure of reliability. Psychological Reports, 1966, 19, 3-11.

Bartko, J. J. On various intraclass correlation reliability coefficients. Psychological Bulletin, 1976, 83, 762-765.

Drexler, J. A., Jr. Organizational climate: its homogeneity within organizations. Journal of Applied Psychology, 1977, 62, 38-42.

Ebel, R. L. Estimation of the reliability of ratings. In W. A. Mehrens and R. L. Ebel (Eds.), Principles of educational and Psychological measurement. Chicago: Rand McNally, 1967, 116-131.

Gavin, J. F. Organizational climate as a function of personal and organizational variables. Journal of Applied Psychology, 1975, 60, 135-139.

Gavin, J. R., & Howe, J. G. Psychological climate: Some theoretical and empirical considerations. Behavioral Science, 1975, 20, 228-240.

Gavin, J. F., & Kelley, R. The psychological climate and reported well-being of underground coal miners: An exploratory study. Human Relations, 1978, 31, 567-581.

Glick, W. H. Conceptualizing and measuring organizational climate: Pitfalls in multilevel research. Academy of Management Review, 1985, 10, 601-616.

Howe, J. G. Group climate: An exploratory analysis of construct validity. Organizational Behavior and Human Performance, 1977, 19, 106-125.

James, L. R. Aggregation bias in estimates of perceptual agreement. Journal of Applied Psychology, 1982, 67, 219-229.

James, L. R., & Jones, A. P. Organizational climate: A review of theory and research. Psychological Bulletin, 1974, 81, 1096-1012.

James, L. R., & Sells, S. B. Psychological climate: Theoretical perspectives and empirical research. In D. Magnusson (Ed.), Toward a psychology of situations: An interactional perspective. Hillsdale, N.J.: Laawrence Erlbaum, 1981, 275-295.

Jones, A. P., & James, L. R. Psychological climate: Dimensions and relationships of individual and aggregated work environment perceptions. Organizational Behavior and Human Performance, 1979, 23, 201-250.

Joyce, W. F., & Slocum, J. W., Jr. Collective climate: Agreement as a basis for defining aggregate climates in organizations. Academy of Management Review, 1984, 27, 7211-742.

Krakower, J. Y. Organizational culture and performance. Presentation at the Association for the Study of Higher Education, San Diego, 1987.

Krakower, J. Y, & Niwa, S. An assessment of the validity and reliability of the Institutional Performance Survey. National Center for Higher Education Management Systems, Boulder, Colorado, 1985.

Newman, J. E. Understanding the organization structure-job attitude relationship through perceptions of the work environment. Organizational Behavior and Human Performance, 1975, 14, 371-397.

Payne, R. L., Fineman, S., & Wall, T. C. Organization climate and job satisfaction: A conceptual synthesis. Organizational Behavior and Human Performance, 1976, 16, 45-62.

Payne, R. L., & Pugh, S. S. Organizatioal structure and organizational climate. In M. D. Dunnette (Ed.) Handbook of industrial and organizational Psychology. Chicago: Rand McNally, 1976.

Powell, G. N., & Butterfield, D. A. The case for subsystem climates in organizations. Academy of Management Review, 1978, 3, 151-157.

Pritchard, R. D., & Karasick, B. W. The effects of organizational climate on managerial job performance and job satisfaction. Organizational Behavior and Human Performance, 1973, 9, 126-146.

Schneider, B. Organizational climates: An essay. Personnel Psychology, 1975, 28, 447-479.

Schneider, B. Organizational climates: Individual preferences and organizational realities revisited. Journal of Applied Psychology, 1975, 60, 459-465.

Schneider, B., & Reichers, A. E. On the etiology of climates. Personnel Psychology, 1983, 34, 19-39.

Shrout, P. E., & Fleiss, J. L. Intraclass correlations: Uses in assessing rater reliability. Psychological Bulletin, 1979, 86, 420-428.

Snedecor, G. W. Statistical methods. (4th Ed.), Iowa: Iowa State College Press, 1946.

Weick, K. E. The social psychology of organizing. MA: Addison-Wesley, 1979.

Winer, B. J. Statistical principles in experimental design. New York: McGraw-Hill, 1971.

Woodman, R. W., & King, D. C. Organizational climate: Science as folklore. Academy of Management Review, 1978, 3, 816-826.

Table 1
Constructs Measured by the Survey

Section	Item	Construct
1		Changes in the institution's external environment
	1	Enrollment Predictability
	2	Revenue Predictability
	3	Competitor Predictability
	4	Students' Tastes & Preferences
	5	Intensity of Competition
	6	Enrollment Competition
	7	Supply of Students
	8	Availability of Financial Resources
2		Decreasing Enrollments
	1	Consensus
	3	Inevitability
	4	Threat
	5	Administrative Control
	6	Duration
3		Decreasing Revenues
	1	Consensus
	3	Inevitability
	4	Threat
	5	Administrative Control
	6	Duration
4		Institutional Characteristics
	1	Specialization
	2	Formalization
	3, 4, 5, 6	Mission
	7	Investor Confidence
	8	Structural Coupling
	9	Centralization
	10	Planning
	11	Innovation
	12	Scapegoating
	13	Resistance to Change
	14	Administrative Turnover
	15	Morale
	16	Slack Resources
	17	Interest Groups
	18	Administrator Credibility

	19	Reallocation Priorities
	20	Conflict
	21	Locus of Control
	22	Internal Mobility
6		Institutional Strategy
	1, 2	Diversity
	4, 7	Conservatism
	5, 8	Moderate Change
	6, 9	Innovation
	3, 10, 11, 12, 13, 14	Administration
7		Institutional Decision Processes
	1, 7	Bureaucratic Allocation
	2, 8	Autocratic Allocation
	3, 9	Collegial Allocation
	4, 10	Rational Allocation
	5, 11	Allocation as Organized Anarchy
	6, 12	Political Allocation
8		Performance and Actions of the Institution
	1, 8, 10	Student Educational Satisfaction
	12, 13, 14	Student Academic Development
	15, 16, 17, 22, 23, 24	Professional Development & Quality of the Faculty
	3, 4, 25	Student Personal Development
	5, 6, 7	Faculty & Administrator Employment Satisfaction
	18, 19, 20, 21	System Openness & Community Interaction
	26, 27, 28, 29, 30, 31, 32	Organizational Health
	2, 9, 11	Student Career Development

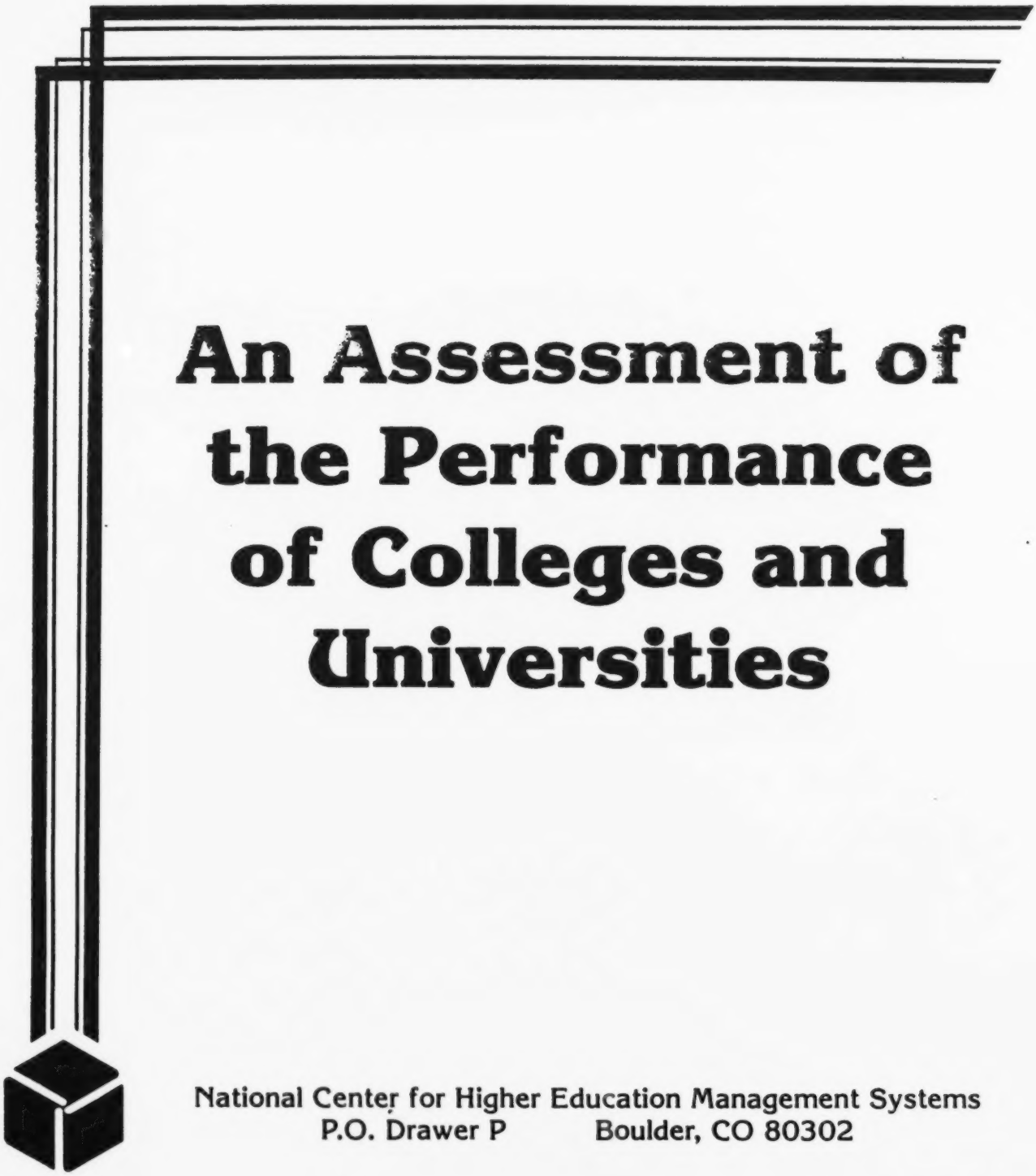
Table 2
Number of Institutions in Study Sample
by Selection Criteria

Graduate Program(s)?	#FTE Students	Enrollment Change	Public	Private
Yes	200-2,500	Growing	2	9
		Stable	4	6
		Declining	8	7
	2,501-10,000	Growing	24	16
		Stable	19	14
		Declining	8	10
	10,001-20,000	Growing	10	3
		Stable	11	4
		Declining	5	1
No	200-2,500	Growing	10	51
		Stable	6	53
		Declining	5	20
	2,501-10,000	Growing	8	7
		Stable	5	6
		Declining	2	0
			127	207 = 334

Table 3
Intraclass Correlations

Section	Item	Administrators n=1321	Faculty n=1158	Trustees n=927	Total n=3406
1	1	.07	.06	.00	.04
	2	.04	.08	.03	.05
	3	.00	.01	.00	.01
	4	.04	.02	.10	.03
	5	.12	.14	.10	.13
	6	.17	.15	.14	.16
	7	.22	.16	.18	.17
	8	.23	.14	.22	.17
2	1	.60	.55	.38	.49
	3	.19	.08	.17	.14
	4	.31	.28	.34	.28
	5	.14	.14	.10	.11
	6	.31	.25	.28	.28
3	1	.31	.29	.29	.29
	3	.14	.12	.09	.09
	4	.28	.29	.17	.22
	5	.00	.12	.00	.09
	6	.32	.11	.24	.19
4	1	.17	.16	.10	.14
	2	.14	.11	.08	.10
	3	.30	.31	.18	.26
	4	.28	.29	.23	.24
	5	.17	.18	.13	.14
	6	.24	.23	.14	.19
	7	.19	.12	.06	.11
	8	.06	.06	.06	.07
	9	.12	.11	.06	.08
	10	.25	.22	.22	.18
	11	.13	.13	.12	.10
	12	.16	.07	.14	.10
	13	.21	.15	.16	.13
	14	.35	.38	.26	.30
	15	.23	.23	.20	.16
	16	.23	.07	.12	.12
	17	.15	.06	.14	.11
	18	.20	.23	.14	.14
	19	.10	.16	.07	.06
	20	.22	.25	.21	.17
	21	.25	.12	.13	.16
	22	.50	.55	.37	.45
6	1	.24	.16	.13	.18
	2	.21	.12	.06	.15
	3	.19	.10	.10	.10
	4	.09	.13	.10	.06
	5	.18	.20	.09	.13
	6	.24	.28	.21	.21

Section	Item	Administrators n=1321	Faculty n=1158	Trustees n=927	Total n=3406
6	7	.06	.20	.14	.11
	8	.16	.05	.10	.08
	9	.16	.19	.11	.14
	10	.10	.14	.16	.10
	11	.14	.17	.10	.10
	12	.22	.23	.18	.18
	13	.19	.12	.13	.11
	14	.07	.08	.04	.05
7	1	.08	.10	.04	.07
	2	.14	.11	.10	.10
	3	.14	.11	.06	.08
	4	.08	.10	.02	.05
	5	.11	.12	.05	.05
	6	.06	.13	.12	.06
	7	.08	.08	.07	.06
	8	.12	.08	.06	.07
	9	.11	.18	.04	.08
	10	.02	.08	.08	.04
	11	.07	.11	.10	.05
	12	.03	.05	.00	.04
8	1	.29	.22	.15	.22
	2	.12	.14	.01	.09
	3	.31	.34	.38	.29
	4	.33	.19	.31	.24
	5	.18	.17	.15	.12
	6	.25	.15	.19	.15
	7	.11	.12	.08	.09
	8	.27	.22	.15	.20
	9	.14	.08	.11	.10
	10	.24	.19	.15	.18
	11	.17	.14	.09	.13
	12	.42	.33	.34	.35
	13	.38	.26	.29	.30
	14	.19	.11	.04	.13
	15	.27	.30	.19	.24
	16	.21	.25	.12	.19
	17	.23	.23	.25	.23
	18	.16	.19	.18	.14
	19	.13	.21	.20	.16
	20	.14	.22	.26	.15
	21	.19	.14	.13	.14
	22	.40	.39	.19	.33
	23	.18	.09	.14	.10
	24	.26	.24	.19	.22
	25	.37	.33	.29	.33
	26	.38	.30	.26	.30
	27	.08	.13	.04	.08
	28	.18	.23	.16	.16
	29	.14	.18	.07	.11
	30	.18	.22	.17	.16
	31	.05	.09	.04	.06
	32	.06	.09	.00	.05



An Assessment of the Performance of Colleges and Universities

National Center for Higher Education Management Systems
P.O. Drawer P Boulder, CO 80302

Dear Respondent:

This questionnaire is part of a national study of performance in colleges and universities conducted by the National Center for Higher Education Management Systems. Several administrators, faculty department heads, and trustees at your institution are completing this instrument. You were selected as a respondent because of the position you hold at this school.

We are seeking your perceptions of the *overall* institution rather than information about one particular department or program. The responses of all individuals will remain strictly confidential. The data will be analyzed at NCHEMS in Boulder, Colorado, and all individual responses will be aggregated. In addition, the name of your institution will be revealed only to individuals at your school in the feedback reports to be provided at the conclusion of the study. You will be able to compare your institution with other similar schools, but the other schools will be described on the basis of their general characteristics, not by name.

The questionnaire is designed to be mailed back to NCHEMS without needing an envelope. On the back cover is printed the address of NCHEMS, along with a sticker identifying your institution as the return address. Just seal up the questionnaire and drop it in the mail. We will pay the return postage. You will find three peel-off stickers included with the questionnaire for your use in sealing up the questionnaire prior to mailing it.

Please complete the questionnaire at your earliest convenience; if possible, we would like it within 10 days of when you received it. Previous respondents have averaged 20 minutes to complete the questionnaire, so despite its length, we hope you find the questions interesting and thought-provoking. If you have questions or comments, please feel free to contact Dr. Kim Cameron at (303) 497-0368. Thank you in advance for your cooperation.

SECTION 1: Changes in the Institution's External Environment

The following questions concern changes in conditions outside your institution over the past few years. Please circle the number to the right of each statement that best reflects your institution's experiences since 1979-80.

	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	
1. Major factors outside our institution that affect its enrollments have become more predictable over the past few years.	1	2	3	4	5	–10
2. Major factors outside the institution that affect its revenues have become less predictable over the past few years.	1	2	3	4	5	–11
3. Competitive actions of other colleges and universities have become more predictable over the past few years.	1	2	3	4	5	–12
4. The tastes and preferences of students have become harder to forecast over the past few years.	1	2	3	4	5	–13
5. Competitive actions of other colleges and universities now affect this institution in more areas (e.g., price, programs, area served) than in the past.	1	2	3	4	5	–14
6. Competition with other colleges and universities for student enrollments has increased over the past few years.	1	2	3	4	5	–15
7. The number of potential students from whom our institution can recruit has increased over the past few years.	1	2	3	4	5	–16
8. Financial resources have become more difficult to obtain over the past few years.	1	2	3	4	5	–17

SECTION 2: Decreasing Enrollments

This section is concerned with whether your institution has experienced decreasing full-time equivalent enrollments during any of the academic years since 1979-80.

1. To the best of your knowledge, did full-time equivalent student enrollments decrease from one year to the next during any of the academic years from 1979-80 to 1982-83?

_____ (1) Yes
_____ (2) No –19

If you answered "no" to the above question, please skip to Section 3 on the following page. If you answered "yes," please complete the remaining items in this section.

2. Please check the years in which you believe that full-time equivalent enrollments decreased from those of the previous year.

_____ 1979-80 _____ 1980-81 _____ 1981-82 _____ 1982-83 –20 21 22 23

Please circle the number to the right of each statement that best reflects your institution's experiences during its most recent episode of decreasing enrollments.

	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	
3. Decreasing enrollments were inevitable at that time.	1	2	3	4	5	–24
4. Decreasing enrollments presented an immediate threat to the viability of this institution.	1	2	3	4	5	–25
5. Predictions of decreasing enrollments provided adequate lead time to take actions that minimized their impact.	1	2	3	4	5	–26
6. Decreasing enrollments were a short-term problem.	1	2	3	4	5	–27

7. Please indicate in the space below the major factors that caused enrollments to decrease at your institution. –28 29 30 31 32 33

SECTION 3: Decreasing Revenues

This section is concerned with whether your institution has experienced decreasing revenues, adjusted for inflation, during any of the academic years since 1979-80.

1. To the best of your knowledge, did revenues, adjusted for inflation, decrease from one year to the next during any of the academic years from 1979-80?

_____ (1) Yes
_____ (2) No —35

If you answered "no" to the above question, please skip to Section 4, which begins on this page. If you answered "yes," please complete the remaining items in this section.

2. Please check the years in which you believe that revenues, adjusted for inflation, decreased from those of the previous year.

_____ 1979-80 _____ 1980-81 _____ 1981-82 _____ 1982-83 —36 37 38 39

Please circle the number to the right of each statement that best reflects your institution's experiences during its most recent episode of decreasing revenues.

	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	
3. Decreasing revenues were inevitable at that time.	1	2	3	4	5	—40
4. Decreasing revenues presented an immediate threat to the viability of the institution.	1	2	3	4	5	—41
5. Predictions of decreasing revenues provided adequate lead time to take actions that minimized their impact.	1	2	3	4	5	—42
6. Decreasing revenues were a short-term problem.	1	2	3	4	5	—43

7. Please indicate in the space below the major factors that caused revenues to decrease at your institution.

_____ —44 45 46 47 48 49

SECTION 4: Institutional Characteristics

In this section, we are asking for your impressions of some general characteristics of your institution. Please answer each item. If you are not sure, make your best guess.

	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	
1. This institution has many administrators performing specialized functions.	1	2	3	4	5	—51
2. Formal policies and rules govern most activities at this institution.	1	2	3	4	5	—52
3. This institution has a special identity, unlike any other in higher education.	1	2	3	4	5	—53
4. There is a general sense that this institution has a distinctive purpose to fulfill.	1	2	3	4	5	—54
5. The academic programs offered here reflect the mission of the institution.	1	2	3	4	5	—55
6. People associated with this institution share a common definition of its mission.	1	2	3	4	5	—56
7. Those who make a personal or financial investment in this institution believe that they receive an ample return.	1	2	3	4	5	—57
8. The activities of the various units in this institution are loosely coordinated or loosely coupled.	1	2	3	4	5	—58
9. Major decisions are very centralized.	1	2	3	4	5	—59
10. Long-term planning is neglected.	1	2	3	4	5	—60

Institutional Characteristics (continued)

	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	
11. Innovative activity is increasing.	1	2	3	4	5	–61
12. Top administrators are often scape goats.	1	2	3	4	5	–62
13. There is a lot of resistance to change in this school.	1	2	3	4	5	–63
14. There is a great deal of turnover in administrative positions.	1	2	3	4	5	–64
15. Morale is increasing among members of this institution.	1	2	3	4	5	–65
16. We have no place that we could cut expenditures without severely damaging the school.	1	2	3	4	5	–66
17. Special interest groups within the institution are becoming more vocal.	1	2	3	4	5	–67
18. Top administrators have high credibility.	1	2	3	4	5	–68
19. When cutbacks occur, they are done on a prioritized basis.	1	2	3	4	5	–69
20. Conflict is increasing within this institution.	1	2	3	4	5	–70
21. Top administrators believe that factors outside the institution largely determine its condition.	1	2	3	4	5	–71
22. Top administrative positions are now held by individuals who were promoted from within the institution.	1	2	3	4	5	–72

SECTION 5. Type of Institution

These questions relate to the type of organization that your institution is most like. Each of these items contains four descriptions of institutions of higher education. Please distribute 100 points among the four descriptions depending on how *similar* the description is to your school. None of the descriptions is any better than the others; they are just different. *For each question, please use all 100 points.*

FOR EXAMPLE:

In question 1, if institution A seems very similar to mine, B seems somewhat similar, and C and D do not seem similar at all, I might give 70 points to A and the remaining 30 points to B.

1. **Institutional Characteristics** (Please distribute 100 points) _____

_____ points for A — Institution A is a very **personal** place. It is like an extended family. People seem to share a lot of themselves.

_____ points for B — Institution B is a very **dynamic** and entrepreneurial place. People are willing to stick their necks out and take risks.

_____ points for C — Institution C is a very **formalized and structured** place. Bureaucratic procedures generally govern what people do.

_____ points for D — Institution D is very **production oriented.** A major concern is with getting the job done. People aren't very personally involved. –74-75 76-77 78-79 80-81

2. **Institutional Leader** (Please distribute 100 points) _____

_____ points for A — The head of institution A is generally considered to be a **mentor, a sage,** or a **father or mother figure.**

_____ points for B — The head of institution B is generally considered to be an **entrepreneur,** an **innovator,** or a **risk taker.**

_____ points for C — The head of institution C is generally considered to be a **coordinator,** an **organizer,** or an **administrator.**

_____ points for D — The head of institution D is generally considered to be a **producer,** a **technician,** or a **hard-driver.** –82-83 84-85 86-87 88-89

Type of Institution (continued)

3. **Institutional "Glue"** (Please distribute 100 points)

_____ points for A — The glue that holds institution A together is **loyalty and tradition.** Commitment to this school runs high.

_____ points for B — The glue that holds institution B together is a **commitment to innovation and development.** There is an emphasis on being first.

_____ points for C — The glue that holds institution C together is **formal rules and policies.** Maintaining a smooth-running institution is important here.

_____ points for D — The glue that holds institution D together is the emphasis on **tasks and goal accomplishment.** A production orientation is commonly shared. —90-91 92-93 94-95 96-97

4. **Institutional Emphases** (Please distribute 100 points)

_____ points for A — Institution A emphasizes **human resources.** High cohesion and morale in the school are **important.**

_____ points for B — Institution B emphasizes **growth** and **acquiring new resources.** Readiness to meet new challenges is important.

_____ points for C — Institution C emphasizes **permanence and stability.** Efficient, smooth operations are important.

_____ points for D — Institution D emphasizes **competitive actions and achievement.** Measurable goals are important. —98-99 100-101 102-103 104-105

SECTION 6: Institutional Strategy

The following section deals with the strategy your institution is pursuing. Please indicate the extent to which you agree or disagree with each item, based on your own perceptions.

	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	
1. We are making our academic programs more diverse.	1	2	3	4	5	—107
2. We are changing the composition of our student body, making it more diverse.	1	2	3	4	5	—108
3. We are increasing the investment of the college in functions that deal with external people (admissions, development, government relations, and others).	1	2	3	4	5	—109
4. This institution tries to insulate itself from pressures in the environment.	1	2	3	4	5	—110
5. This institution tries new activities or policies, but not until after others have found them successful.	1	2	3	4	5	—111
6. This institution is likely to be the first to try new activities or policies.	1	2	3	4	5	—112
7. Our top administrators educate important outsiders about the value of the institution in order to improve its legitimacy in their eyes.	1	2	3	4	5	—113
8. This institution tends to do more of what it does well, to expand in areas we have expertise.	1	2	3	4	5	—114
9. This institution establishes new domains of activity.	1	2	3	4	5	—115
10. We are increasing the quality of the individuals in top administrative positions.	1	2	3	4	5	—116
11. Top administrators emphasize finding new money, more so than saving money, for a balanced budget.	1	2	3	4	5	—117
12. The top administrative team has developed multi-year stategies to achieve long-term institutional objectives.	1	2	3	4	5	—118
13. The top administrative team receives rapid and accurate feedback about enrollment and financial conditions.	1	2	3	4	5	—119
14. The top administrative team provides incentives for conserving resources.	1	2	3	4	5	—120

Institutional Strategy (continued)

15. Of the four actions listed below, which one is the **most likely** response of this institution to changes in the outside world? (check one response)

    _____ 1. Change the institution's policies and procedures
    _____ 2. Change the institution's image through communication
    _____ 3. Change the kinds of students, suppliers, or donors we deal with
    _____ 4. Weather any storm, making no changes —121

16. Of the four actions listed below, which one is the **least likely** response of this institution to changes in the outside world? (check one response)

    _____ 1. Change the institution's policies and procedures
    _____ 2. Change the institution's image through communication
    _____ 3. Change the kinds of students, suppliers, or donors we deal with
    _____ 4. Weather any storm, making no changes —122

SECTION 7: Institutional Decision Processes

The following questions deal with the decision process used at the institution for allocating resources—whether the resources are staff positions, dollars, space, or other valuable items. Please indicate the extent to which you agree or disagree with each item.

	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	
1. This institution has a standard set of procedures it uses to make resource allocation decisions.	1	2	3	4	5	—124
2. One individual at this institution makes all resource allocation decisions of any consequence.	1	2	3	4	5	—125
3. People at this institution make resource allocation decisions collegially.	1	2	3	4	5	—126
4. A rational process is used to make resource allocation decisions at this institution.	1	2	3	4	5	—127
5. No particular pattern characterizes the process by which resource allocation decisions are made here.	1	2	3	4	5	—128
6. Resource allocation decisions are political, based on the relative power of those involved.	1	2	3	4	5	—129
7. Resource allocation is decided bureaucratically at this institution.	1	2	3	4	5	—130
8. Resource allocation is decided autocratically.	1	2	3	4	5	—131
9. Resource allocation is a matter for group discussion and consensus.	1	2	3	4	5	—132
10. Resource allocation decisions are based on what objectively seems best for this institution overall.	1	2	3	4	5	—133
11. Resource allocation is decided by coincidence; it is a matter of organized anarchy.	1	2	3	4	5	—134
12. Persuasion, negotiation, and coalition-building are examples of what determines resource allocation.	1	2	3	4	5	—135

SECTION 8: Performance and Actions of the Institution

The items in this section ask about the performance and actions of your institution. If you are not sure of the item, please make your best guess.

To what extent are the following characteristics typical of this institution?

	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	
1. One of the outstanding features of this institution is the opportunity it provides students for personal development in addition to academic development.	1	2	3	4	5	—137
2. This college is highly responsive and adaptive to meeting the changing needs of its external constituencies.	1	2	3	4	5	—138
3. This college has a very high ability to obtain financial resources in order to provide a high quality educational program.	1	2	3	4	5	—139
4. When hiring new faculty members, this college can attract the leading people in the country in their respective fields to take a job here.	1	2	3	4	5	—140
5. There seems to be a feeling that dissatisfaction is high among students at this institution.	1	2	3	4	5	—141
6. There have been relatively large numbers of students either drop out or not return because of dissatisfaction with their educational experiences here.	1	2	3	4	5	—142
7. I am aware of a large number of student complaints regarding their educational experience here as registered in the campus newspaper, meetings with faculty members and administrators, or other public forums.	1	2	3	4	5	—143
8. There is a very high emphasis on activities outside the classroom designed specifically to enhance students' **personal, non-academic** development.	1	2	3	4	5	—144
9. There is a very high emphasis on institution-community or institution-environment activities.	1	2	3	4	5	—145
10. Students develop and mature in non-academic areas (e.g., socially, emotionally, culturally) to a very large degree directly as a result of their experiences at this institution.	1	2	3	4	5	—146
11. A very large number of community-oriented programs, workshops, projects, or activities were sponsored by this institution last year.	1	2	3	4	5	—147

12. Think of last year's graduating class at this institution. Please rate the academic attainment or academic level achieved by that class as a whole. (Select one)

_____ 1) That class is among the very top classes in the country.
_____ 2) That class is well above average.
_____ 3) That class is slightly above average.
_____ 4) That class is about average.
_____ 5) That class is slightly below average.
_____ 6) That class is below average.
_____ 7) That class is near the bottom of classes across the country. —148

13. Estimate what percent of the graduates from this institution go on to obtain degrees in graduate or professional schools.

_____ 1) From 91% to 100% of the students here go on for advanced degrees.
_____ 2) From 76% to 90% go on.
_____ 3) From 61% to 75% go on.
_____ 4) From 46% to 60% go on.
_____ 5) From 31% to 45% go on.
_____ 6) From 16% to 30% go on.
_____ 7) From 0 to 15% go on to obtain advanced degrees. —149

Performance and Actions of the Institution (continued)

Please use the following scale in responding to the following questions

7 — All	**5** — More than half	**3** — Less than half	**1** — None
6 — A large majority	**4** — About half	**2** — A small minority	

14. _____ How many students would you say engage in extra academic work (e.g., reading, studying, writing) over and above what is specifically assigned in the classroom. —150

15. _____ What proportion of the students who graduated from this institution last year and entered the labor market obtained employment in their major field of study? —151

16. _____ How many students would you say attend this college to fulfill definite career or occupational goals as opposed to attending for social, athletic, financial, or other reasons? —152

17. _____ Of those students who obtained employment after graduating from this institution, for how many of them was career training received at this institution important in helping them obtain their jobs? —153

18. _____ If given the chance of taking a similar job at another school of his or her choice, how many faculty members do you think would opt for leaving this school? —154

19. _____ If given the chance of taking a similar job at another school of his or her choice, how many administrators do you think would opt for leaving this school? —155

20. _____ Estimate how many faculty members at this institution are personally satisfied with their employment. —156

21. _____ Estimate how many administrators at this college are personally satisfied with their employment. —157

22. _____ How many faculty members at this institution would you say published a book or an article in a professional journal, or displayed a work of art in a show last year? —158

23. _____ What proportion of the faculty members would you estimate teach at the "cutting edge" of their field—i.e., require **current** journal articles as reading, revise syllabi at least yearly, discuss current issues in the field, etc.? —159

24. _____ How many faculty members at this college are actively engaged now in professional development activities—e.g., doing research, getting an advanced degree, consulting, etc.? —160

25. _____ Colleges may be rated on the basis of their relative "drawing power" in attracting top high school students. In relation to other colleges with which it competes, what proportion of the top students attend this institution rather than the competition? —161

This section asks you to rate your perceptions of the general day-to-day functioning of the overall institution. Please respond by **circling** the number that best represents your perceptions of each item. If you agree strongly with one end of the scale, circle a number closer to that end of the scale. If you feel neutral about the item, circle a number near the middle of the scale.

FOR EXAMPLE:

How is the weather in this town?

warm, bright, and sunny — 1 (2) 3 4 5 6 7 — cold, wet, and dismal

How do you perceive the following?

26. **Student/faculty relationships**

unusual closeness, lots of informal interaction, mutual personal concern — 1 2 3 4 5 6 7 — no closeness, mostly instrumental relations, little informal interaction —162

27. **Equity of treatment and rewards**

people treated fairly and rewarded equitably — 1 2 3 4 5 6 7 — favoritism and inequity present, unfair treatment exists —163

Performance and Actions of the Institution (continued)

28. **Organizational health of the college**

college runs smoothly, healthy organization, productive internal functioning	1	2	3	4	5	6	7	college runs poorly, unhealthy organization, unproductive internal functioning —164

29. **General levels of trust among people here**

high suspicion, fear, distrust, insecurity	1	2	3	4	5	6	7	high trust, security, openness —165

30. **Conflicts and friction in the college**

large amount of conflict, disagreements, anxiety, friction	1	2	3	4	5	6	7	no friction or conflicts, friendly, collaborative —166

31. **Recognition and rewards received for good work from superiors**

recognition received for good work, rewarded for success	1	2	3	4	5	6	7	no rewards for good work, no one recognizes success —167

32. **The amount of information or feedback you receive**

feel informed, in-the-know, information is always available	1	2	3	4	5	6	7	feel isolated, out-of-it, information is never available —168

SECTION 9: Respondent Demographics

These items ask for some personal demographic information. This information will not be used to try to identify you, rather it simply will help us in our analysis of the questionnaire data. Please answer each item.

1. In what year were you born? _____ —170 171 172 173

2. In how many organizations have you worked in your professional career? _____ —174 175

3. How many years have you held your current position? _____ —176 177

4. Are you male _____ or female _____ ? —178

5. Have you received degrees (i.e., bachelors, masters, or doctorate) in any of the following fields? (please check all that apply)

_____ 1) Business administration
_____ 2) Educational administration
_____ 3) Public administration
_____ 4) Health Care administration
_____ 5) Personnel or Industrial administration
_____ 6) Other administration fields —179

6. In what field did you receive your last degree?

_____ 1) Humanities (e.g., literature, languages)
_____ 2) Fine Arts (e.g., music, sculpture)
_____ 3) Physical Sciences (e.g., physics, chemistry)
_____ 4) Biological Sciences (e.g., zoology, botany)
_____ 5) Social Sciences (e.g., sociology economics)
_____ 6) Mathematics and Computer Sciences
_____ 7) Professional Fields (e.g., law, engineering)
_____ 8) Administration Fields (educational, business)
_____ 9) Other _____ —180

7. How many years have you been affiliated with this institution? _____ —181 182

8. What is your highest academic degree?

_____ 1) Doctorate or other terminal degree
_____ 2) Masters
_____ 3) Bachelors
_____ 4) Associate —183

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL

FIRST CLASS PERMIT NO. 61 BOULDER, CO

POSTAGE WILL BE PAID BY ADDRESSEE

National Center for Higher Education
Management Systems
Organizational Studies Program
P.O. Drawer P
Boulder, Colorado 80302